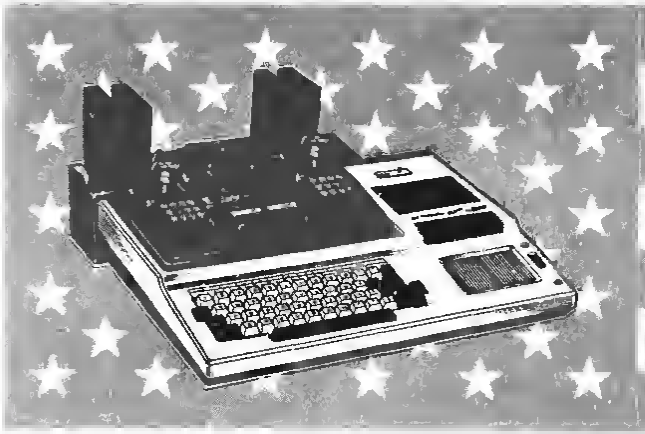


FEBRUARY '84

I-M 1 IN A MILLION CLUB

NATIONAL NEWSLETTER

INSIDE...

*NEW **HELPFUL HINTS** SECTION*
FRONT SCREEN ENCODER
LARGER NATIONAL MAILBOX
CLASSIFIEDS!
*ERIC BECKETT CONTINUES WITH THE '**ARCADE**'!*
MORE ADS-NEW PRODUCTS
FREEZEX IN REVIEW!

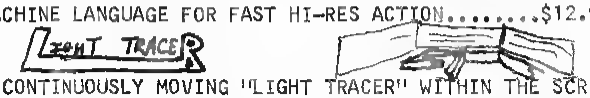
GEO•GRAFIX LIMITED
P O Box 54 • Arrowsmith, Illinois 61722

BULK RATE
U S POSTAGE
PAID
Bloomington, IL.
Permit No. 298

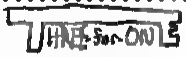
SEND CHECK OR MONEY ORDERS
TO:
THE PROGRAM PEDDLER
c/o JOHN MECHALAS
2830 TOWNWAY RD.
DANVILLE, IL 61832

LOOK! UP ON THE HILL! IT'S A WORM, IT'S A BUG, NO IT'S CENTIPEED!! CENTIPEED!! CENTIPEED!! CENTIPEED!! CENTIPEED!! CENTIPEED!!

YOUR MUSHROOM GARDEN HAS BEEN INVADED BY A GIANT CENTIPEED AND A PESKY SPIDER. DESTROY THE MUSHROOM-EATING SPIDER THAT DROPS FROM THE SKY AND THE STATIONARY DRAGONFLY BEFORE HE'S SQUISHED. THE CENTIPEED BREAKS IN TWO EACH TIME HE'S SHOT AND SOME PARTS TAKE MORE THAN ONE SHOT TO BE DESTROYED! IF YOU START GETTING GOOD, YOU MUST CONTEND WITH MORE THAN ONE AT A TIME! COMES ON A CASSETTE TAPE WITH BACKGROUND SOUNDS OF CENTIPEDE TO LISTEN TO DURING GAME PLAY FROM THE CASSETTE RECORDER. IT EVEN HAS A DEMONSTRATION MODE. 90% MACHINE LANGUAGE FOR FAST HI-RES ACTION.....$12.95



MOVE THE CONTINUOUSLY MOVING "LIGHT TRACER" WITHIN THE SCREEN BORDERS. BE CAREFUL YOU DON'T HIT THE WALLS OR THE PATH YOU CREATE. IT'S A FAST-PACED BASIC, LO-RES GAME THAT IS A MUST FOR BLOCKOUT AND TRON FANS.....$9.95



THREE EXCITING PROGRAMS ON ONE TAPE!!!!!

PROGRAM 1- SPACE WARS!!!

IT'S YOU AND A HUMAN OPPONENT BATTLING IT OUT IN A HEAD-TO-HEAD SPACE BATTLE. IT FEATURES TWO SCREENS. THE INDESTRUCTABLE ASTEROIDS AND THE COMETS. FEATURES FOUR DIRECTIONAL FIRING AND AN UNLIMITED NUMBER OF SHOTS ON THE SCREEN AT ONE TIME. BASIC/MACHINE LANGUAGE HI-RES PROGRAM.

PROGRAM 2-

YOU ARE TRAPPED IN A ROOM WITH NO EXITS AND GIANT GREEN BLOCKS. TO ESCAPE, YOU MUST GET EVERY BLOCK MOVING. BUT! WHEN A BLOCK HITS A WALL OR ANOTHER BLOCK, IT BOUNCES BACK! KNOCK A BLOCK INTO AN ORANGE TARGET TO MAKE THAT BLOCK DISAPPEAR. BE CAREFUL NOT TO GET SQUISHED BY A MOVING BLOCK! A FAST PACED BASIC/MACHINE LANGUAGE GAME.

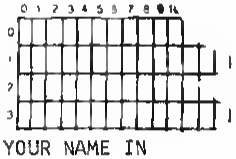
PROGRAM 3- AIR FORTRESS!!

DEFEND THE AIR FORTRESS FROM THE KAMAKAZEE ALIENS THAT ARE TRYING TO BREAK INTO THE NUCLEAR REACTER. FIRE THE FOUR GUNS ON THE PERIMETER OF THE FORTRESS TO DESTROY THEM. WHEN ONE REACHES THE CENTER, BOOM! BASIC, LOW-RES GAME.

THREE-FOR-ONE.....$12.95

LOW-RES GRAPHICS GRAPH PAPER

I HAVE GRAPH PAPER FOR THE GRAPHICS PROGRAMMER. 6 GRAPHS ON A SHEET AND 20 SHEETS IN A PACKET FOR ONLY $1.75!
HERE IS A SMALL PORTION OF THE GRAPHS:



ALL PROGRAMS ARE 8K CASSETTES AND ALL PRICES INCLUDE POSTAGE & HANDLING.

GOT A QUESTION? GOT A GRIPE? JUST WANT 800 PEOPLE TO SEE YOUR NAME IN PRINT? I WILL PUBLISH SOME COMMENTS YOU HAVE.

GENERAL NEWS

PROGRAM LIBRARY

It's going to take a little more time to group all of the CLUB PROGRAMS that we have received and make them available to the membership. There have been several NEW programs added to the list with more coming in all the time. We are in the process of sorting through games, utility, and data programs in order to make variety filled interesting packages for the membership. A complete list will appear soon. Thanks for your patience. If you have any programs that you would like added to the club program library, please send them in with your permission to distribute copies of them to the membership. The club library will be open to all members. The only charges imposed will be to cover duplication and mailing costs.

? HARDWARE ?

If you know anyone who has APF hardware such as:
FI-100
SI-232
BB-1
R8-K
JOYSTICKS
PARTS
PLEASE LET US KNOW!

Since APF had their sale last year, we would like to know the whereabouts of these items. Some of them are becoming VERY SCARCE. We would like to keep our members informed of those who have these units and are willing to part with them!

Some members want to expand to a disk drive but cannot locate the interface. Others would like to expand but haven't been able to find a BB-1. Please help everyone out by sending in any information that you may have in this area. Thanks!

VISA & MASTERCARD

These services are now available for club members. GEO*GRAFIX LTD. hardware and software can be purchased using either of these methods. Our product line is growing and now contains MODEMS, FLOPPY DISKS, CLEANING KITS, PRINTERS, and other items. Our ads will appear when space is permitting. Send for a complete description and price list.

NEW GAMES

In a letter that we received from EDDIE BEDNAR, Eddie reports that he is working on 3 new programs that should be available for purchase by late APRIL, if not sooner. KRAZY KONG, IM-1 ZAXXON, and GOLF are in the making. Eddie also mentioned that his revised version of the APF BASIC LANGUAGE REFERENCE MANUAL should be ready in early MARCH.

LOW ENROLLMENT!

Membership enrollment for this year is VERY LOW in comparison to what it has been in the past. Every effort is being made to bring the number of members up to where it should be.

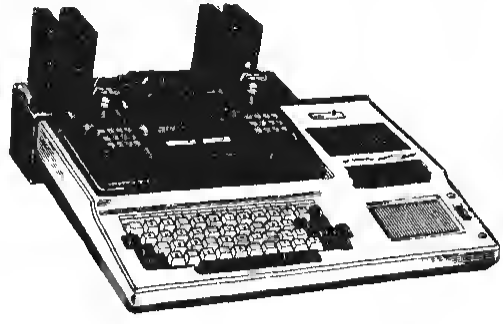
There will be periodic mailings of SAMPLE NEWSLETTERS to past members of the club, and to owners who have never been in the club.

All advertisers will be notified a month prior to these mailings, in order that they may advertise to a larger number of people.

HARRY BROWN from Port Charlotte Florida writes: "We have the makings of a FIRST CLASS CLUB!" Our thanks go to Harry and to many others who have expressed similar opinions. We'll be doing everything possible to promote those feelings throughout the current member, and non-member groups.

OUR APOLOGIES

We hope that all of you will excuse the poor quality of one of the photos that appeared in the January issue. The photo was suppose to give an example of a letter made with the program COPY WRITER but it didn't reproduce very well when printed. We promise to watch it more closely in future issues!



Q & A

FROM MIKE JANICK

QUESTION

Is it possible to load a program off the tape and have it RUN automatically as soon as it is loaded?

ANSWER

YES-with most programs-but you have to type in a statement before loading.

10CALL34040:CALL34225

After typing in this statement, have your tape ready in the computer, press PLAY/SAVE and type RUN. Once the checksum is made, the program will begin to run.

QUESTION QUESTION

Can I run more than 1 printer off of the same modem, and how fast can I run data out with a modem?

ANSWER ANSWER

1. Alot of modems are quite capable of driving more than 1 device. In most cases, simply tapping off of pins 1,3,5,20 from the modem to the 2nd device is sufficient to accomplish this. However, it would be advisable to consult the manufacturer of the modem that you are using. The older, discreet component units such as the T103 SANGAMO, can run more than one device without any problem, but the new LSI units may not be able to handle the additional load, and damage could occur. It would be worth a call to the manufacturer before attempting to run more than one device.

2. The speed of transmitting data without errors depends upon the quality of the connection made from your IM-1 to the far end, via telephone facilities.
In some cases, 1200 BAUD (120CPS) is used for common DIAL UP service and most phone company carrier systems will handle this rate with no errors. However, if the telephone equipment on either end of the connection is obsolete or poorly maintained you may have trouble running at this speed. 300 BAUD is the most popular BAUD RATE for the home computer user. A modem with higher BAUD RATE capabilities is generally more expensive than the lower speed units. This is another reason why the 300 BAUD modem is the most popular unit.

FROM DAVE CONWAY AND JOHN PIERCE

QUESTION

Each of these members share a similar question. Dave would like to know how the IM-1 can be interfaced to a GORILLA BANANA printer, and John would like to know if it can be interfaced to a RADIO SHACK TP-10.
Unfortunately we don't have the answer for them. According to the manual, using the routine at 827B, you can change the output characteristics of the SI-100 from 7 bit even parity to 8 bit NO PARITY, but we haven't been able to get the job done. Will someone please help us ALL out and send in the solution. We'd sure appreciate it!

QUESTION

FOLLOW UP: Can the BROTHER ELECTRONIC TYPEWRITER be interfaced to the IM-1?

ANSWER

YES! According to BROTHER INTERNATIONAL an optional interface (IF-50) can be purchased separately for around $200.00. This unit includes DIP switches that can be configured for the IM-1 output format in serial form. We're still gathering information on electronic typewriters at this time and will begin complete articles, as promised, soon. Thanks for your patience.

PRODUCT REVIEW

FERZERX!!

This 8K game, written in machine code by G.R. JONES contains a TWO PLAYER OPTION with both scores displayed on the playing field, SKILL LEVEL SELECTION, ARCADE LIKE ACTION, HIGH RESOLUTION GRAPHICS, AND GOOD VARIETY.

The OBJECT of the game is to destroy a number of ROBOT looking HI RES creatures called CRETINS, before they destroy YOU! Ten pointa are scored for each cretin that you destroy. The more cretins destroyed, the higher the score.

The playing field consista of cretin infeated rooms that are made up of interior walls that you must AVOID contact with. Any contact with an interior or exterior wall will end the round. Once the amount of cretins have been destroyed in a room, you must exit safely in order to increase your score by 100 points.

Upon entering a new room, a new batch of ARMED CRETINS will greet you. Some rooms are more difficult to maneuver in than others because of random placed interior walls. Good variety in playing fields and action are prevalent in this game.

ENTER ZERX!

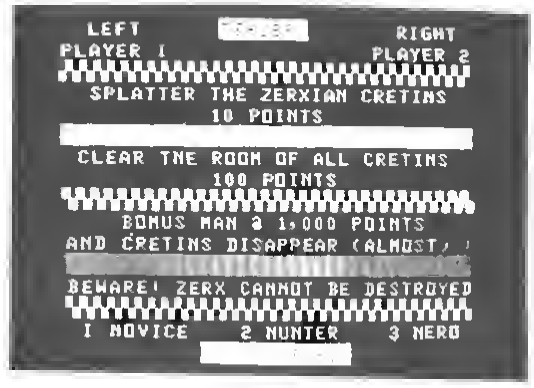
The onslaught of ZERX in this game increases the tempo and adds to the excitement and challenge.

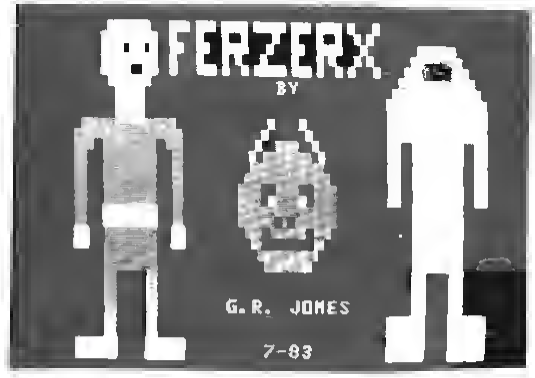
ZERX appears out of no-where! He plows through walls and ignores your feeble attempts to wipe him out. He slowly and methodically STALKS YOU, and tries to get you in a poaition that you can't escape from. Your only recourse is to AVOID HIM, get as many cretins that you can, and EXIT the room as soon as possible. If he catches you, the round will end! After losing 3 of your men, either by ZERX or the cretins, the game will end and the final acore will be displayed.

There are otber interesting points about this game, and some surprises during the play. It's a high quality game for all ages.

The following are important elementa of the game along with some glimpses of the front screen, scoreboard.

1. PREDOMINANT LANGUAGE--MACHINE LANGUAGE
2. COLOR VARIATION--MODERATE
3. SOUND EFFECTS OR MUSIC--GOOD
4. TYPE OF CONTROL--JOYSTICK
5. SCREEN VARIATION--LAYOUT OF ROOMS CHANGE AS THE GAME PROGRESSES.





6. PREDOMINANT MODE OF RESOLUTION--HIGH RESOLUTION.
7. INSTRUCTION CLARITY--SUFFICIENT FOR THE GAME.
8. GAME VARIATION OR RANDOM SURPRISES--LARGE VARIATION IN PLAYING FIELDS. SOME SURPRISES OCCUR AFTER A CERTAIN LEVEL IN REACHED IN THE SCORING.

Note...Because of the color contrast and shading in the MAIN PLAYING FIELD of this game, as it appears on a B & W set, we were unable to produce a photo of it that would reflect the overall quality of the layout and characters.
Photos appearing in this section of the newsletter are printed in order to give you a GLIMPSE at SOME of the screens in each program reviewed. Although every effort will be made to print GOOD PHOTOS, the ones appearing should NOT be considered as FULL REPRESENTATIONS of the graphics contained within the programs.

SOAPBOX

KEITH PHILLIPS

"WHY AM I KEEPING MY APF? Someday we will all own another computer. If I keep my APF, how can it be utilized in a new and better system? It could be used as an I/O buffer to greatly relieve a host computer of the time consuming tasks. Printer buffers of 8K can run $300+ with no intelligence (or keyboard). Also, speech synthesizer buffers.

Modems run slow and can tie up a host computer needlessly. The APF could relieve your future computer of a lot of drudgery.

For special features-a slight modification to a host program would let the APF keyboard/joypad function as SPECIAL CONTROL KEYS for ease of operation. The IBM has you press 3 keys simultaneously for certain basic words/functions. In summary-why sell an APF at depressed prices?

How about an "OVER THE HORIZON" section where people tell about new technological advances they've read about that will help us make intelligent decisions on when to buy our future computer.

When will color monitors suffer the price declines that the pocket calculators, digital watches, and home computers went thru?

Let's get everybody convinced that IT'S FINE TO SHOP AROUND FOR ANOTHER COMPUTER, but it's cost effective in the long run to hang onto their APF!"

LOUIS G. DOOLEY

"You've invited input, so herewith a litany of comments.

First, I oscillate between by ZX81 and my IM-1, while also assembling an H89 computer. Even with the latter completed I will not want to abandon either of the others.

I would like to have more information about the 6800 family of chips (e.g. what does 6809 have that the 6800 doesn't?).

I would like to have more information about the IM-1 itself. For example, why 2 units; what can either unit do by itself (without the other); description of IM-1 successors; description of IM-1 kinfolk (other 6800 systems, such as WINTEK line and the new WORKSLATE).

I would like to have a service manual for the IM-1 (was unable to obtain at time of purchase), not necessarily the original or a fancy copy.

I would like info. on augmenting memory and adding printer capability, etc., without going the BB module route.

I would like improved screen characters; they are very dull and lack sharpness--very difficult for me to read. (My ZX81 has far superior readability.) IM-1 color is very listless and on a B/W TV text and background color contrast is almost nonexistent.

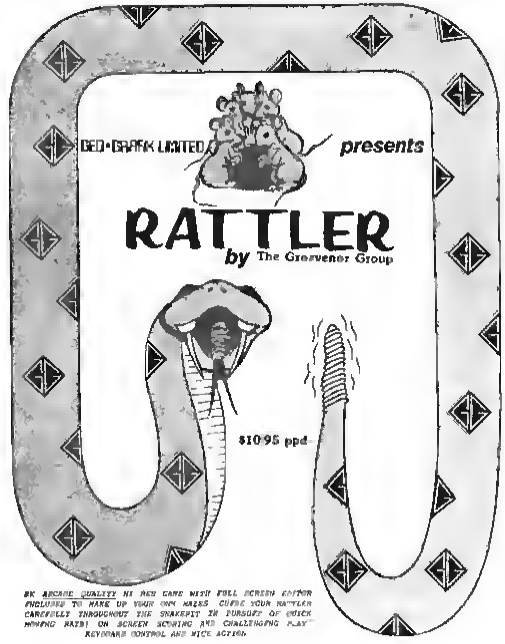
I've added a 'FORTH EPROM' to my ZX81, a very welcome diversion from BASIC. I would like to have an IM-1 FORTH system.

Many of the programs in previous newsletters were not printed well and some contained errors; these latter were never followed up with corrections.

A statement about APF's current status would be interesting.

The IM-1 joysticks and keypads are not really first line quality; the market now offers a wide variety that could replace these, a job that perhaps the IM-1 owner could do, with proper advice.

Why couldn't the 2 power sources be combined into one unit? There's presently too much of a jumble of cables to unsnarl when one wants to set the machine up, or put it away."



THE ARCADE

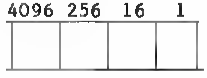
REVIEW

As mentioned last month, the HEXIDECIMAL numbering system is used by the MC6800 processor to allow it to perform it's functions. OP CODES are used as instructions to tell the processor where to look, for data, how to handle it, where to put it, or what in the world to do with it!

This month, we'll try to clarify the procedure in converting HEX numbers to DECIMAL numbers, and back again. Consider the following:

CONVERT DECIMAL 46 TO HEXIDECIMAL

Draw four boxes connected together and labeled as shown.



The highest amount possible in any box is F. Remember that counting begins with ZERO and after 9 comes A,B,C,D,E,F. To convert our number of 46 to hex, first divide 46 by the largest number possible that appear above the boxes, that can go into 46 without producing a negative number. The number chosen would be 16. 46 divided by 16 would equal 2 with a remainder. The digit 2 would go into the box labeled 16 and the remainder would be converted to its hex equivalent and placed into the box labeled 1. The hex equivalent of 14 would be E. So our decimal number of 46 would equal 002E in hex. To convert a number from hex to decimal, simply multiply each of the hex digits by their appropriate placement value. Add these values together. The total will be the decimal number. In our example, 002E would be converted to decimal as follows:

2X16=32
E(14)X1=14
32+14=46

Now to continue on with ERIC BECKETT'S instructions which will give you a few more examples of how these conversions are done.

If you have a large number, say for example 57,000 to convert from decimal to hex, first divide your decimal number by 4096. The answer, without the remainder is our first hex digit. Take the remainder and divide it by 256. This answer, without the remainder is the second hex digit. Take the remainder of that and divide by 16. This answer without the remainder is the third hex digit. The final remainder will make up the fourth digit.

As an example, let's take our decimal number of 57,000. To convert this to hex, we would first divide 57,000 by 4096. The result is 13 with a remainder of 3752. So the first hex digit is D. Remember A=10,B=11, C=12, etc. Now take the remainder of 3752 and divide it by 256. The result is 14 or E in hex, with a remainder of 168. So our next digit to the right will be E. So far we have DE. Now divide the 168 by 16. The result is 10 or A in hex, with a remainder of B. Our hex number is now DEA. The final number is obtained by dividing our remainder of 8 by 1. The outcome of converting the decimal number of 57,000 to hexidecimal is DEAB. It is obvious that hexidecimal numbers are used to represent LARGE decimal numbers.

To convert hex back to decimal we do just the reverse. Taks hex A440 for example. Take the first digit (A), which by the way is called the MOST SIGNIFICANT BIT or MSB, and multiply it by 4096. A or 10 X 4096 = 40960. Write this number down. Now take the next digit to the right times 256 (4 X 256 = 1024). Write this number under 40960. Take the next number to the right times 16 (4 X 16 = 64). Write this under 1024. Finally take the last number to the right, which is called the LEAST SIGNIFICANT BIT or LSB, times 1 (0 X 1 = 0). Place this under the 64 in our totals column and add the numbers up. What we have done is (10X4096)+(4X256)+(4X16)+(0X1) for a total of 42048. Our hexidecimal number of A440 equals 42048 in decimal.

If we wanted to go to a MACHINE LANGUAGE program or subroutine from a BASIC program, and our machine language program started at address A440, we would use a basic statement of CALL42048 and the program would immediately go to that address in hex (A440). TO BE CONTINUED.....

ORCHESTRA PIT

AND NOW.....FOR YOUR LISTENING ENJOYMENT.....AN ENCHANTING MELODY CALLED 'FER ELISE'

conducted by
G.R. JONES

```
10  POKE 26112,0: POKE 24578,38: CALL 17046
11  PRINT  SPC (11);"FER ELISE": PRINT : PRINT
12  PRINT  SPC (4);"CONDUCTED BY G.R. JONES": PRINT : PRINT
13  PRINT  SPC (10);"PERFORMED BY"
14  PRINT : PRINT  SPC (4);"YOUR IMAGINATION MACHINE"
15  GOTO 500
20  MUSIC "*70-*70000*70-*70000*70-*50*60*50*30"
30  MUSIC "-/30-/50-/70000-30"
40  MUSIC "70*30*50-*50"
50  MUSIC "-/700002040-60"
55  RETURN
60  MUSIC "70-*30-*50*50"
70  MUSIC "-/30-/50-/70000-30"
75  RETURN
80  MUSIC "70*50-*50*30"
90  MUSIC "-/30-/50-/70000-30 "
95  RETURN
100  MUSIC "-*50*50*60*70"
110  MUSIC "-/50-/70000-20-50"
120  MUSIC "*50+*70*70*60"
130  MUSIC "-2040-60-*20"
140  MUSIC "-*50*70*60*50"
150  MUSIC "-/30-/50-/70000-30"
160  MUSIC "*30*60*50-*50"
170  MUSIC "-/700002040-70000"
175  RETURN
500  GOSUB 20
510  GOSUB 60
520  MUSIC "-/70000": GOSUB 20
530  GOSUB 80
550  GOSUB 100
560  MUSIC "    -/700000000    "
570  GOSUB 20
580  GOSUB 80
590  MUSIC "        "
600 X=X+1: IF X<2 THEN 15
610  MUSIC "-/30000000"
620  PRINT  SPC (7);"THAT'S ALL, FOLKS!"
625  PRINT
630  DIM A$(3)
640  INPUT "LIKE TO HEAR IT AGAIN (Y/N) ";A$
650  IF A$="Y" THEN X=0: GOTO 10
655  CALL 17046: PRINT
660  PRINT "CLASSICAL MUSIC FROM THE CREATOR"
670  PRINT "OF...FERZERX!"
```

***** THE ENTERTAINER *****

```
500   CALL 17046
510   PRINT "******* THE ENTERTAINER ******* "
520   MUSIC "*20*30*10600705O*70*70*60*400*50*3070*10604005040-4030 3020+20"
521   MUSIC "30*1030*1030*1000*10*20*+20*30*10*20*30070*20*10020+20"
522   MUSIC "30*1030*1030*10006050+4060*10*300*20*1060*20020+20"
523   MUSIC "30*1030*1030*1000*10*20*+20*30*10*20*30070*20"
524   MUSIC "*100*10*20*30*10*20*300*10*20*10*30*10*20*300*10*20*10"
525   MUSIC "*30*10*20*30070*20"
528   MUSIC "*10020+20"
529   MUSIC "30*1030*1030*1000*10*20*+20*30*10*20*30070*20*10020+2030*1030*1030*1
0006050+4060*10*300*20*1060*20020+20"
530   MUSIC "30*1030*1030*1000*10*20*+20*30*10*20*30070*20"
531   MUSIC "*100*10*20*30*10*20*300*10*20*10*30*10*20*300*10*20*10"
532   MUSIC "*30*10*20*30070*20*1003040+40"
533   MUSIC "50605003040+4050605003010/50/60/70102030201020/5030405060403040"
534   MUSIC "50605003040+4050605005060+607070+70060402050030404O"
535   MUSIC "50605003040+4050605003010/50/60/701020302010201OO/50/+4050"
536   MUSIC "10/60100/6010/60/5010305003010/50/6010302010"
538   MUSIC "1000000000"
```

PRODUCED BY FRANKEL & ABRAMS INC.

Just add a few RESTS to this program, then forget about buying that PIANO! Our thanks to FRANKEL & ABRAMS for sending it in!

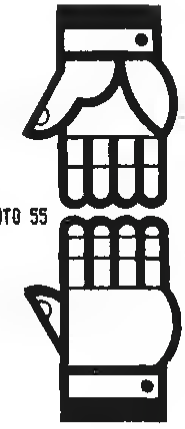
HELPFUL HINTS

This category has been requested by a MAJORITY of membership. The intent here is to pass along information that will explain some of the more unusual tips, and programs, that would be of use to the membership.

STRING MANIPULATION

Tbis is a ahort program submitted by JIM CLATFELTER that gives a good example of how to uae STRING VARIABLES in a program.

```
1Ø  CALL 17Ø46: FOR I=Ø TO 32: PRINT : NEXT
15  GOTO 1ØØ
2Ø E$= KEY$ (Ø): IF E$="" THEN 2Ø
3Ø E= ASC (E$): RETURN
4Ø  POKE 4Ø96Ø,2: POKE 4Ø961,Ø
45  FOR N=Ø TO 4: PRINT T$(N,Ø);: NEXT
46  RETURN
5Ø  POKE 4Ø96Ø,3: POKE 4Ø961,896: PRINT "ENTER TWØ LINES":I=Ø: POKE 4Ø96I,928: PRINT  SPC (65);
52  POKE 4Ø96I,928: POKE 928,I43:A=928
55  GOSUB 2Ø: IF E<I4 TNEN 8Ø
6Ø  PRINT E$;: POKE A+I+1,I43:T$(X,I)=E$
65  IF I=64 TKEN I=65:E=8: NUSIC "4": GOTO 85
7Ø I=I+1: GOTO 55
8Ø  IF E=8 IF I=Ø THEN 55
85  IF E=8 THEN T$(X,I)="":I=I-1:T$(X,I)="": POKE 4Ø961,A+I: PRINT "  ";: POKE 4Ø96I,A+I: POKE A+I,143: GOTO 55
9Ø  IF E=2 POKE 4Ø96I,928: PRINT  SPC (I+I);: POKE 928,I43: POKE 4Ø961,928:T$(X,Ø)=A$(Ø,Ø): GOTO 5Ø
95  RETURN
1ØØ  DIN E$(1),A$(I,64),T$(4,64)
2ØØ  FOR X=Ø TO 4: GOSUB 5Ø: GOSUB 4Ø: NEXT
2Ø5  POKE 4Ø96Ø,3: POKE 4Ø961,896: PRINT  SPC (97);: POKE 4Ø961,896
21Ø  PRINT "TYPE RUN TO 8EGIN AGAIN";
215  STOP
3ØØ  REM  KEYS REPEAT NHEN NELG DOWN
31Ø  REN   928 IS A SCREEN LOCATION, 143 IS A CURSOR
32Ø  REN     8 IS THE ASCII VALUE OF TNE RUØ OUT KEY
33Ø  REN     2 IS TNE ASCII VALUE OF THE REPT KEY, TKIS KEY NILL RUB OUT TNE WHOLE LINE AS YOU ENTER IT
34Ø  REN    NERE IS ANO CTRL KEYS NORK AS RETURN KEYS
35Ø  REN  IT'S OK TO ENTER COMMAS
36Ø  REN      PRESS PLAY/SAVE ANO TYPE GOTO 8ØØØ TO CSAVE
8ØØØ  FOR I=Ø TO 32: PRINT : NEXT
8ØI Ø  PRINT  SPC (6);"STRING ENTRY ROUTINE": PRINT : PRINT : PRINT  SPC (7);"BY JIN CLATFELTER": PRINT : PRINT : PRINT : PRINT
8Ø2Ø  CALL 34848: CALL 34I38: CALL 34Ø61
```



CHUCK CLANCY has a method of displaying a LO RES SCOREBOARD at the top of a HI RES SCREEN using a 1/60th INTERRUPT ROUTINE. A SPECIAL THANKS TO JIM & CHUCK for their help in this category.

```
10POKE8193,60:POKE8194,222          THIS SETS THE GRAPHICS MODE
20CALL17766                         THIS CALLS ADDRESS LOADING RTN FROM ROCKET PATROL ROM
30POKE508,1                         THIS SETS THE INTERRUPT
                                    TO EXIT POKE 8195,52:POKE8194,30
76A=100:B=125                       THE POLLOWING WILL SET UP THE SCOREBOARD FOR DISPLAY
78POKE40960,2:POKE40961,0           PURPOSES.
80PRINT"SCORE1=";A;"      SCORE2=";B
81CALL17006
83A=A+2:B=B+1
84IFA=200THENPOKE40960,2:POKE40961,0:GOTO88
85GOTO78
88PRINT"POKE8195,52 THEN 8194,30TO"
90PRINT"RETURN TO BASIC OR LIST FIRST"
91PRINT"TO PROVE IT'S NO FLUKE          "
```

●●●●●●●●●●

SHORT PROGRAMS

The program CHUCK - A - LUCK sent in by RUTH & KLAUS WIRTZ-CANADA. ARITHMETIC PRACTICE sent in by ARTHUR SEBELIUS. THANKS TO RUTH, KLAUS, AND ARTHUR for providing this ENJOYMENT!

```
5  REM ">>>>> GAME MODIFIED BY    K.O.WIRTZ-PENETANG/ONT.-CANADA<<<<<"
10  CALL 17046: POKE 24578,38
20  POKE 40960,2: POKE 40961,0
30 X=159: FOR S=544 TO 575: POKE S,X: NEXT
40 X=175: FOR S=576 TO 607: POKE S,X: NEXT
50 X=191: FOR S=608 TO 639: POKE S,X: NEXT
55 X=223: FOR S=640 TO 671: POKE S,X: NEXT
60  PRINT : PRINT : PRINT : PRINT : PRINT : PRINT "*******************************"
65  PRINT "   C H U C K   - A -   L U C K ": PRINT "*******************************"
70  MUSIC "1716151413121234567": PRINT
75 X=255: FOR S=864 TO 895: POKE S,X: NEXT
80 X=159: FOR S=896 TO 927: POKE S,X: NEXT
85 X=191: FOR S=928 TO 959: POKE S,X: NEXT
90 X=239: FOR S=960 TO 991: POKE S,X: NEXT
100  COLOR =4: SHAPE =15: VLIN 0,15,0: VLIN 0,15,3I
120  FOR I=1 TO 1000: NEXT : CALL 17046
140  PRINT "  CHOOSE A NUMBER FROM- 1 TO 6-"
145  PRINT : PRINT "     I WILL ROLL THREE DICE"
150  PRINT : PRINT " IF  YOUR NUMBER MATCHES ONE DIE ": PRINT "     I WILL PAY EVEN MONEY": PRINT
155  PRINT "  IF  YOU MATCH TWO DICE I WILL  "; PAINT ," PAY 2:1 "
160  PRINT "  IF  YOU MATCH THREE DICE I WILL"
165  PRINT ," PAY 3:1 "
170  PRINT : PRINT :N=500
180  PRINT "YOU HAVE $$ "$N$" . MAKE A BET !"
190  PRINT : INPUT "",0
192  MUSIC "<100"
195  IF 0=0 THEN  STOP
200  IF 0>N THEN 410
210  IF 0>0 IF 8<100= INT (8<100) THEN  GOTO 230
220  GOTO 420
230  PRINT " CHOOSE A NUMBER "
240  PRINT : INPUT "",N
245  MUSIC "3030302020200"
250  IF  INT (N)=N IF N>0 IF N<7 THEN  GOTO 270
260  PRINT "     C H E A T E R  ! !": GOTO 230
270 A= INT ( RND (1)<6)+1
272  FOR I=I TO 30: NEXT
275 O= INT ( RND (0)<2+1)+ INT ( RND (1)<4+1)
277  FOR I=1 TO 50: NEXT
280 C= INT ( RND (0)<6+1)
282  MUSIC "1234567<1<2<3<4<5<6<7"
285  PRINT ;"DIE # 1 IS A "$N
286  PRINT : PRINT ;"DIE # 2 IS N "$O
288  PRINT : PRINT ;"DIE # 3 IS A "$C
290 T=0
300  IF A=N THEN T=T+1
310  IF O=N THEN T=T+1
320  IF C=N THEN T=T+1
330  PRINT " YOU HAVE MATCHED "$T$" TIMES."
332  PRINT
335  IF T=0 GOTO 350
340  ON T GOTO 380,390,400
350  PRINT : PRINT ," YOU LOOSE $ "$0
360 N=N-8: IF N<=0 THEN  GOTO 430
370  GOTO 180
380  PRINT : PAINT " YOU'VE WON $ "$B:N=N+8: GOTO 180
390  PRINT : PRINT " YOU'VE WON $ "$8<2:N=N+2<0: GOTO 180
400  PRINT : PRINT " YOU'VE WON $ "$8<3:N=N+8<3: GOTO 180
410  PRINT " I DON'T TAKE I.O.U'S !!!!": GOTO 180
420  PRINT " DON'T GET CUTE, HEY !!": GOTO 180
430  MUSIC "/70000/7000/700/70/7": PRINT "YOU GUN,YOU HAD TO GO FOR BROKE"
435  PRINT "I DONT WANT TO KNOW YOU ANY MORE": MUSIC "<70<70<70"
440  STOP
```

```
2  DIM C$(5): DIM A$(8)
3  PRINT "ARITHMETIC PRACTICE": PRINT "BY ARTHUR SEBELIUS"
4  PRINT
5  PRINT
6  PRINT
7  INPUT "HOW MANY EXAMPLES",N
8  INPUT "EASY OR HARD",A$
10 X=X+1
12  IF X=N+1 THEN  STOP
13  PRINT X
15  IF A$="EASY" THEN  GOTO 18
16  IF A$="HARD" THEN  GOTO 20
18 E= INT ( RND (0)<10):F= INT ( RND (0)<100+1)
19  GOTO 25
20 E= RND (0)<100:F= RND (0)<100+1
25 Z= INT ( RND (0)<4+1)
30  IF Z=1 THEN  GOTO 70
40  IF Z=2 THEN  GOTO 80
50  IF Z=3 THEN  GOTO 90
60  IF Z=4 THEN  GOTO 100
70  PRINT E;"PLUS",F
75  INPUT "EQUALS",0: GOTO 110
80  PRINT E;"MINUS",F
85  INPUT "EQUALS",B: GOTO 120
90  PRINT E;"TIMES",F
95  INPUT "EQUALS",8: GOTO 130
100  PRINT E;"DIVIDED BY",F
105  INPUT "EQUALS",0: GOTO 140
110  IF B=(E+F) THEN  PRINT "NOW!": GOTO 150
115  MUSIC "505030605050333": GOTO 157
120  IF 8=(E-F) THEN  PRINT "WHEE!": GOTO 150
125  MUSIC "505030605050333": GOTO 157
130  IF 0=E<F THEN  PRINT "WHOOPEE!": GOTO 150
135  MUSIC "505030605050333": GOTO 157
140  IF 8=E/F THEN  PRINT "HOT DOG!": GOTO 150
145  MUSIC "505030605050333": GOTO 157
150  MUSIC "40666610666666"
152  PRINT
154 A=A+1
155  PRINT "NO. CORRECT IS",A: GOTO 162
157 G=G+1
158  PRINT "NO. CORRECT IS",A
162  PRINT
165  PRINT "YOUR SCORE IS",100<A/(N+G),"PERCENT"
170  GOTO 10
```

Greg M. Ching
121 Emerson St.
Palo Alto, CA 94301

A senior, double majoring in Electricel Engineering (Computers), and Philosophy (Formal Systems) et Stanford University.
"I am very interested in working to extend the capabilities of my IM-1, especially in the area of MAIN FRAME communicetions."

R. Bruce Hoskan
70 Darwin Ave.
Merritt Island, FL 32953 (305) 452-3015

Space Shuttle Systems Engineer/Programmer et Kennedy Space Center, Floride. President of Spece Coast Microcomputer Club end Computers-for-Kids (C4K) project in locel school system. Now writing APF IM-1 educetionel software for school labs with more then 50 APFs in deily use.

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Steven G. Liberatore
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Woburn, MA 01801

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John Pierce
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Layton, UT 84041

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"I know how to program in BASIC very well. I plen to go to one of the Arizone universities next year. Major: Chem Engineering. I would like to know how to program in other languages."

Dwight E. Morris
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W. Palm Beach, FL 33406

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Douglas L. Smith
3952 Persimmon Dr., Apt. T2
Fairfax, VA 22031

"Have system with 2 disk drives end e printer & modem. Am interested in finding adventure for the IM-1. Am professionel computer programmer. Like to trade programs and write programs."

Artshop

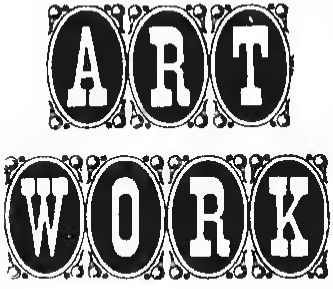
```
5  CALL 17046
10 X=0
15  PRINT "ENTER OBJECT # FOR LOCATION ";X
16  PRINT "OR ENTER -1 (RET) TO DISPLAY"
17  PRINT "OR ENTER -2 (RET) TO EDIT"
18  INPUT Y
19 Q=0
30  POKE X,Y
50  IF Y=-1 GOSUB 150
51  IF Y=-2 GOTO 200
52  IF Q=1 GOTO 300
53  IF Q=2 GOTO 70
54 X=X+1
55  IF Q=>511 PRINT "SCREEN IS FULL": MUSIC "IZ3455": GOTO 50
60  GOTO 15
70  CALL 17046
75  FOR Z=512 TO 1024
80  POKE Z, PEEK (Z-512)
90  NEXT
95  IF Q=2 GOTO 15
100  POKE 40960,255
110  CALL 34040: CALL 34138
120  POKE 40960,2: POKE 40961,0
130  FOR Z=1 TO 17: PRINT "YOUR PICTURE IS SAVED TO TAPE!!": NEXT
140  STOP
150  PRINT "ENTER 1 (RET) IF YOU WANT TO"
151  PRINT "DISPLAY AND CSAVE IMMEDIATELY."
152  PRINT "ENTER 2 (RET) JUST TO DISPLAY": INPUT Q
153  RETURN
154  STOP
200  INPUT "ENTER LOCATION (0-511) TO EDIT";C
201  INPUT "ENTER NEW VALUE";N
202  POKE C,N: PRINT "CHANGE IS MADE": GOTO 15
203  STOP
300  PRINT "INSERT NEW TAPE-PRESS PLAY/SAVE"
301  PRINT "KEY-THEN HIT RETURN KEY."
302  INPUT A: GOTO 70
```

For those of you who don't mind spending a little extra time at the keyboard, here's a program that will take you and a companion about an hour or so to do. When completed, a colorful LO RES front screen picture will be displayed on your screen.

This is a method of sharing SCREEN ART without the need of a cassette tape.

After entering the BASIC program, type RUN. Have your partner read 1,2,or3 digit numbers from left to right, line by line, while you type them in. You may stop and display unfinished portions at any time, edit if needed, and return to the program again. The first group of numbers (3 digits) will be entered at memory location ZERO, and will advance each time an entry is made until the entire screen is full. At that time, the picture will be ready to display, or save to tape for future display.

If you would like to pass along YOUR favorite front screen for others in the club to see, send it in ON TAPE and we will decode and print it in an upcoming issue.




```
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215 215 160 215 215 175 160 160 160 20 9 13 5 19 224 224 160 160 160 160
160 197 197 197 197 197 197 197 197 197 197 197 197
```

THE LANGUAGE BARRIER

READ/DATA

The DATA statement allows you to store data inside your program. Data in the data lists are obtained via READ statements when the program is run. The data list contains the values to be assigned to the variables specified in the variable list of a READ statement. Items in the data list are separated by commas. When a program reaches a DATA statement, it proceeds to the next statement with no other effect.

DATA statements may appear anywhere in a program, but the order in which they appear is important. Data from the data lists are read sequentially, beginning with the first item in the first DATA statement. If your program includes more than one DATA statement, the DATA statements are read in ascending line number order unless otherwise specified by a RESTORE statement.

Thus, the order in which the data appears within the data list and the order of the DATA statements within the program normally depend in which order the data is read.

Data in the data list must correspond to the type of the variable to which it is assigned. Thus, if a numeric variable is specified in the READ statement, a numeric constant must be in the corresponding place in the DATA statement.
The following is an example of a DATA program using numeric variables.

```
100FORZ=1TO5
110READA,B
120PRINTA,B
130NEXTZ
140DATA2,4,6,7,8
150DATA1,2,3,4,5
160STOP
```

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MAILBAG

We received a package from BRUCE HOSKEN which contained a lot of information about his SPACE COAST MICROCOMPUTER CLUB and COMPUTERS POR KINDERGARTEN (C4K). We have written to Mr. Hosken and asked permission to re-publish some of the articles about his club and we're still awaiting his reply. We would hope to be able to have it ready by next month.

The following information was submitted by DAVID DONNELLY and is a continuance of last months list of POKES AND CALLS that can be used in IM-1 programs. Thank you David! The list will continue each month (space permitting).

DECIMAL	HEX	CONDITION	REMARKS
32975	80CF	PROC	INPUT FROM KEYBOARD TO REG-A. REF 6-9
33403	827B	PROC	OUTPUT ON PRINT MODE MARKER. REP RS232 CHAP6
33907	8473	PROC	OUTPUT TO SCREEN. REF 6-9
33934	848E	PROC	OUTPUT CHAR TO SCREEN. REF RS232 P.16
34040	84F8	PROC	MOTOR ENABLE..2-SEC WAIT. REF 7-2
34061	850D	PROC	MOTOR OFF..AUDIO OFP. REF 7-2
34138	855A	PROC	WRITE HEADER..SCREEN..MEMORY..CHECKSUM 7-2
34141	855D	PROC	WRITE HEADER..MEMORY. REF 7-7
34225	85B1	PROC	READ SCREEN..MEMORY..CHECKSUM. REF 7-2
34228	85B4	PROC	READ TO MEMORY. REF 7-7
34964	8894	PROC	RETURN TO BASIC. REF 5-5
40960	A000	FLAG	CURSOR ADDRESS. REF 6-1
40961	A001	FLAG	CURSOR POINTER (LSB)
40967	A007	FLAG	LOW BYTE TO START READ/WRITE REF 7-7 (LSB)
40968	A008	FLAG	LOW BYTE TO START READ/WRITE REP 7-7 (MSB)
40970	A00A	FLAG	HIGH BYTE TO READ/WRITE (LSB)
40997	A025	FLAG	DISK SELECT DR-0=X31..Dr-1±X31 (SEE 26791)
41009	A031	FLAG	DIM VAR POINTER REF 5-6
41010	A032	FLAG	DIM VAR POINTER (LSB)

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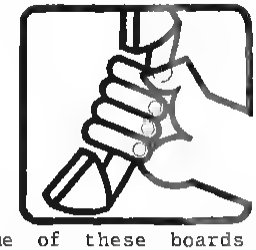

Some of these boards are very busy, so be patient. Early morning hours are usually the best times for most. If you don't receive an answer after a few rings, go on to a different number and try again later.

Our list of dial-up bulletin boards and user nets is growing and growing. It will take time to verify that the numbers are good, but eventually we should have some numbers of working systems in YOUR AREA. If you are in a hurry to get some of these numbers, give us a call, or write, and we'll try to find some on our current list of verified numbers.

* * * SOFTWARE * * *

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G. CASINO 1: ROULETTE / KENO / SLOTS Las Vegas here you come.
H. BLACKJACK this rounds out the Las Vegas games.....
I. BASEBALL This one plays a good game a Baseball and alows a lot of control on the ball & players.....

If anybody out there has any cartridges not listed & would like to have them converted please contact us at the address below.....

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